



A Good-Deal Flight

By Lt. Warren Van Allen

As the new guy in your first fleet squadron, nothing is better than a good-deal, all-JO flight. Our four-man crew consisted of two new guys: our newest mission commander, with less than 600 Prowler hours, and me, with less than seven months of fleet experience.

After taking off from NAS Whidbey Island, we noticed the weather was building west of the Cascade Mountains. That type of weather buildup is not uncommon in Whidbey, especially in the fall. Our airspace, on the other hand, was about 60 miles east of the Cascades, and the weather there was clear and a million, as forecasted.

The mission was basic-aerodynamic maneuvers (BAM), and the event started with fundamental aerobatics and progressed into surface-to-air defensive tactics. After finishing the required training items, we still had gas and time

in the area, so we decided to do more aerobatics. We were on the back half of a barrel roll when we got what seemed like a dual-generator failure. We lost all lights and radios in the cockpit, and, for a second, everything got uncomfortably quiet. With no radios or ICS, I had to take off my mask to yell to the pilot to pull the ram-air turbine (RAT). The RAT will restore a number of essential electrical items. The pilot beat me to it, and, by the time my mask was off and I began to yell, the radios and lights had come back to life under RAT power. We quickly recovered from the maneuver and climbed on a heading back toward Whidbey.

With good four-way comms, our crew began to assess the situation. On closer inspection, we thought we had had a double-generator failure; instead, we had had an odd mix of electrical failures.

Driving west, we divided the tasks at hand to get ready to land at Whidbey, potentially in the poor weather. I was communicating with ATC and reading through the PCL, while the backseaters got weather updates from ATIS and metro. They also followed me through the pocket checklist (PCL). Over ICS, we were all trying to figure out exactly what we were dealing with.

Before getting the RAT deployed, we had lost radios, ICS, flood lights, and utility lights, all of which pointed to some type of partial DC failure. In the few seconds between losing comms and getting the RAT pulled, we didn't notice any specific indications of an AC failure. The crew, however, decided to err on the side of caution and assumed we may have had some sort of AC failure that was restored when the RAT restored essential bus power. In the Prowler, if the RAT does restore AC-essential power, then DC-essential power gets switched to the emergency transformer-rectifier, which receives its power from the RAT. Long story short, if you pull the RAT, and the RAT subsequently fails, then both AC- and DC-essen-

tial are lost, and you can't get them back. Operating speed for the RAT is 110 knots, so, on landing rollout, we expected to lose AC- and DC-essential. Therefore, we coordinated a precautionary-arrested landing, because, without electrical power, we would not have speedbrakes, nosewheel steering, anti-skid, or flaperon pop-ups, all of which we would need to slow down and control a normal landing rollout.

We had our plan, and, as we headed west, we were welcomed with weather that was better than when we left. We also had paddles waiting on-station to help us out with the field arrestment. The next big question was whether we could dirty-up. A complete DC-essential failure would necessitate a no-flaps/no-slats landing, and we would need to lower the gear by the emergency method. It turned out we could dirty-up, and we made an uneventful arrested landing at the field, where we ended up losing all electrical power when the RAT fell off-line in the wire.

After maintenance investigated the problem, they determined we had two of four DC-essential, feeder circuit breakers pop. However, because of the 30-something-year-old wiring in the Prowler, we did not see all of the failures associated with those two feeders, and we had some failures that shouldn't have been associated with those two feeder circuit breakers. The result in the cockpit was a partial electrical failure that manifested itself like a dual-generator failure.

As a very junior aircrew, we didn't have the experience to fall back on to precisely diagnose the problem. As is often the case with the Prowler, no electrical failure is the same. Instead, we delegated our tasks throughout the crew, used good crew-resource management (CRM), and fell back on our procedures and the PCL, along with a little forward thinking by the mission commander. We kept relatively minor problems from turning into bonafide emergencies. 🦅

Lt. Van Allen flies with VAQ-141.

Mishap-Free
Milestones

VAQ-136	19 years	30,975 hours
HMM-265	2 years 10 months	10,000 hours